433, 162, 464, 439

Egypt	MR1
Turkey	MB1
Iraq	MH1
Syria	MD1
Lebanon	ME1
Historical Palestine	MF2
Israel	MF1

/For an account of the economic effects of industrialization after World War II and information on industrial output in countries of the Middle East, see 66: Bonne, M1 Middle East, category 116 as follows: Egypt - pp. 293-298, p. 309, Turkey - pp. 298-300, 307-308, Syria and Lebanon - pp. 300-302, 309-310, Palestine - pp. 302-304, Israel - pp. 310-311./

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

two-metre-gauge systems (Baghdad–Baṣra and Baghdad–Kirkuk) remained a source of delay and trouble, and the floods of 1926 destroyed much railway property. But the reopening of Persian pilgrim traffic after 1924 brought welcome revenue to the railway. The Indian labour disappeared in thousands year by year, replaced by 'Iraqis.

Industry in modern guise was slow to appear. Cotton-ginning and mechanical transport maintenance, ancillary to other forms of enterprise, have been mentioned. Of modern manufacture there was none, though various possibilities were often discussed. The future source, however, of the country's greatest single enterprise and wealth advanced during these years from the conference-room into the open: mineral oil.

The Turco-Persian Frontier Commission of 1913–14 had allotted to Turkey, and therefore ultimately to 'Iraq, the western half of the Naftkhana border area south of Khaniqin; and the Turkish, and thus by inheritance the 'Iraqi, Government had accepted that this Transferred Territory should be treated as still included in the grant made to D'Arcy in 1901. Negotiations on this basis between the Anglo-Persian Company and the 'Iraqi Ministry of Works were concluded in 1925, and later reopened to produce a revised and modernized agreement in May 1926. Drilling had early located a producing well, followed by others, and it was decided to convey the crude oil by pipeline the twenty-mile distance to Khaniqin. The refinery which, with Government encouragement, the Company decided to erect at Alwand outside the town, but still within the Transferred Territory, was begun in June 1926. 'Iraq seemed thus assured of its own petroleum supply, with all the importance of this to mechanical transport, pump-irrigation, and perhaps future industries.

The Vizirial promise given to the Turkish Petroleum Company on 28 June 1914 had in the seven years following been first doubted but later affirmed by the Foreign Office. It was questioned but later accepted by the French who in 1920, under the Cadman–Berthelot agreement at San Remo, inherited the Deutsche Bank's 25 per cent. shareholding in the Company; and it was viewed askance by the Americans who demanded an Open Door to 'Iraqi development with no complication of old unratified promises. This diplomatic obstacle was removed by the allotment of half the Anglo-Persian share to a group of American companies by an agreement reached in principle in 1923, but not implemented formally until 1928. Thus the shares of the Company in its final form were held as to 5 per cent. as ever by Mr. Gulbenkian, and as to 95 per cent. equally between the Shell Group (as the Anglo-Saxon Petroleum Company), the Anglo-Persian (as the

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

even the basic validity—of the oil concessions was a usual move of politicians in opposition.

In the greatest of 'Iraq's industries, that of agriculture, the war was a period of unusual activity, stimulated by the need to produce and by high prices. Agricultural machinery, thanks to lend-lease supplies, was seen almost for the first time in the northern liwās and those of Baghdad and Kut; in 1945 some scores of tractors, mechanical ploughs, cultivators, and combines were in operation, with great effect on 'Iraqi conceptions of agricultural possibilities. Projects for ambitious modern farming took shape among the educated and the owners of capital; a College of Agriculture had been founded in 1941; and a law was passed in 1944 authorizing the establishment of agricultural Co-operative Societies. But none of these measures prevented the increasing drift of countrymen in their hundreds or thousands towards the towns, where war-time employment was plentiful. In the field of land settlement, the committees, which had worked steadily and in increased numbers since 1933, were wisely kept at their all-important tasks throughout the war. Only minor attention was given as yet to southern 'Iraq, and little to Mosul, Arbil, Dulaym, Diwaniya, or Karbalā liwās; but much was done in the dispute-ridden agricultural lands of Kirkuk, Baghdad, Ḥilla, and Diyalā, where good progress was made with definition of land categories, the mapping of boundaries, and the recording of individual registrations over areas which now approached a million acres. Much was heard of plans both for model villages and for the allotment of small-holdings of Government land to single families—a sign that the evils of peasant insecurity, poverty, and lack of incentive were now fully realized. On the Dujayla Canal, dependent on the Kut barrage, work under a special law started in 1945 on a practical settlement of families on sixty-acre State-owned plots, with the incentive of free title to be gained after ten years of work; and meanwhile village institutions and amenities—school, farm offices, nurseries, dispensaries, and a co-operative store—were provided by the Directorate. The Dujayla Scheme was full of promise; it started with eighty carefully-chosen families, later to be multiplied tenfold, and it aroused keen competition for admission.

'Iraq's security after 1941 allowed its vital Irrigation services to continue their canal maintenance and flood protection, their studies and planning, though the intended major projects could not at present be initiated. The work interrupted in 1941 on the Habbaniya–Abu Dibis outlet was completed by 1943, and the intake-channel from the river (begun under Willcocks) and the return-channel to it, were redesigned but not yet undertaken. Pump irrigation was fully maintained.

1: Longrigg G-4, 5 (ca. 1915-1940) MH1 Iraq MH1

pletion of the Kirkuk–Arbil extension and its Lesser Zab bridge: of the railway and road bridge[1] at Baghdad, opened late in 1950: of the Musayib bridge leading to Karbalā: and of new stations at Ba'quba, Diwaniya, Naṣiriya and elsewhere. New rolling stock was ordered and by 1950 delivered. Progress was made in erecting a grandiose combined station and administrative headquarters at Baghdad West, and in redesigning the yards and depots there; but the high cost of these projects, the diminution of receipts by road and air competition (in spite of good traffic in grain and oilfield materials), and losses due to repeated river flooding rapidly exhausted the war-time surplus and led to the need to borrow first from Government in 1946, then from London—a loan of £3 million —in 1950, before supplies and contractors could be paid and work could proceed. Working conditions in the railway system were disturbed by the strikes elsewhere mentioned in 1945, 1946, and 1949. The Jewish employees of the traffic branch were replaced in 1949 by imported Pakistani staff, and the training of 'Iraqis to replace these and the few remaining British executives was accelerated. The status and composition of the Railway Board was unchanged, though criticized by the press as outdated and insufficiently 'national'. The post of Director-General was passed by H. C. Smith to W. J. Moffat in 1950, and an 'Iraqi, General Isma'il Ṣafwat, assumed the post in 1952.

'Iraq Airways was initiated by the Railway as a subordinate enterprise in 1945, and started service in 1946 with five light aircraft hired from Great Britain. In the following year the hired aircraft were replaced by its own machines, and it extended its range from Baghdad–Baṣra outwards to Mosul, Cairo, and Damascus, and by 1948 could, thanks to reciprocal agreements, offer transport weekly or monthly to Teheran, Karachi, and Ankara. The service, to which British Overseas Airways Corporation acted as technical advisers and agents, was efficiently maintained but, thanks to competition and high costs, financially unprofitable. British, American, Dutch, French and other foreign airlines continued to use 'Iraqi airports. An expenditure of over ID 2 million on aerodromes formed part of the six-year development plan. The meteorological service, begun in 1936 in a single room, now maintained under the Ministry of Defence a dozen stations and many rainfall-observation posts, used its own wireless links, and broadcast weather reports for Baghdad area half-hourly.

Telecommunications had, by the close of the period, reached a high standard. Trunk land-lines had been overhauled, often duplicated and widely extended; automatic telephone exchanges

[1] The bridges were built by Messrs. Holloway Bros.; earthwork on the Kirkuk–Arbil line was handled by Messrs. Balfour Beatty.

312 movement in Table VI clearly, if not as completely and as accurately as I hoped to do. Although the figures given are incomplete and inexact in places they can be relied upon in the aggregate to furnish a trustworthy general picture of events. It will be seen that whereas in 1921 there were probably something like 140 pumps averaging about 11 horse power installed almost exclusively in the Baghdad and Amara Liwas, in 1929 there were over 2,000 pumps averaging from 25-30 horse power extending along all the principal waterways of the country. On the estimated basis of 50 *misharas* * per horse power the area irrigable by the former was about 200, by the latter about 7,400 square kilometres. According to Table I the total area of the riverain tracts affected is over 10,000 square kilometres; but only a fraction of this can be annually cultivated. The data are crude and the results must be regarded merely as rough approximations: but they indicate the wonderful extension of private pump irrigation that has taken place during the last ten years. It is [439] also interesting to note that the importation of pumps for irrigation purposes during the ten years 1920 to 1929 were 28, 110, 42, 18, 157, 157, 238, 288, 468 and 570 respectively, or a total of 2,066.

It is my duty in this report to consider this development primarily from the point of view of land tenure and in that connection to make some criticisms about the methods of land acquisition adopted that appear obvious enough now. Seriously as I think these errrors have jeopardised the success of many of the pump undertakings, this should not be allowed to obscure the beneficial character of the general effort made, the valuable safeguard against famine that it provided, and the [166] powerful incentive to settle on the land that it created. And if the movement had not unfortunately coincided with the severest economic depression that the civilised world has encountered, the effects of the initial mistakes made would have been less prompt and less serious.

241 6. The general failure of a development from which so much was hoped, is ascribed jointly and severally to a number of causes. Among 464 these may be mentioned (*a*) the absence of a suitable paying summer 465 crop, (*b*) the shortage and indisciplined character of available labour, 439 (*c*) the prevalence of the share system of payment for labour and the consequent dislike felt by agricultural workers for crops that cannot be shared on the field in kind, (*d*) the lack of competent and dependable local agents and mechanics, (*e*) the poor and dirty quality of much of the produce and the consequently poor reputation of Iraqi agricultural commodities in the world's markets, (*f*) the defects of internal and the costs of external transport, (*g*) the general economic depression of the world and the glut of the world's markets with grain.

185 The question is such an important one, not only from the point of view of those who have sunk money and effort in these enterprises but also owing to its effect upon the prosperity and well-being of the whole country, that the Government for a long time have sought remedies in special legislative proposals designed to remove some of the difficulties mentioned. Among the objects more particularly aimed at may be instanced: the enforcement of the cultivation of a certain proportion of money crops (e.g. cotton), the binding of labour more closely to the soil, and the better regulation and more effective use of such labour. The power of legislation to bring about these and other improvements in the economic conditions of this extensive agricultural development, appears to me to be over-rated and the dangers of restrictive legislation operating adversely to be insufficiently realised.

312 Most of the causes enumerated earlier have probably exerted a

* A mishara is reckoned = 2,[illegible] sq. metres.

312 seriously, many a decisively, injurious effect on the success of pump development as a whole. These difficulties all call for careful study and for steady and carefully considered ameliorative measures. They are, however, for the most part outside of the scope of this report. But underlying and aggravating all other difficulties there is a widely prevailing uncertainty of rights to hold and to exploit the land affected. This has in many cases poisoned the relations between the two classes mainly interested in the majority of these enterprises and reduced to a minimum the prospects of their successful co-operation. And it has nearly always left the rights and the obligations of those concerned injuriously indefinite towards both the Government and to those associated with them. Consequently the bulk of these pump-fed areas have never received the single-minded and unified agricultural management that was, and is, an essential condition of success. It is possible, perhaps likely, that the other adverse conditions recited would in any case have prevented the general and widespread success anticipated. But a number of instances have been given me of pump ventures that have proved profitable in spite of these handicaps, because unified management was, for one reason or another, possible and realised.

427 Be this as it may, it is indisputable that the prospects of general success would have been increased if in all cases the rights to the land
311 affected had been authoritatively settled and the requisite unification of agricultural control had been secured, before capital and energy had been so lavishly expended on these ventures. It was most unfortunate that this remarkable agricultural development should have coincided with the singularly unstable economic period that has followed the war. But it can also be recognised now, in the light of experience, that the rush to develop these riverain tracts was carried out without sufficient preparation and foresight, and at a rate and to an extent which made too drastic demands upon the adaptability and the numbers of the primitive agricultural population upon whose efforts success ultimately depended.

311 The riverain tracts, which are primarily affected, are among the
312 most valuable agricultural areas in the country, because (*a*) of their contiguity to the main waterways and roadways, (*b*) of the natural fertility of the alluvium deposited along the river ridges which contain them, and (*c*) of their relatively high levels, which facilitate drainage and minimise the dangers of high floods. But owing to the last quality any regular cultivation of these tracts necessitates the installation of some artificial means of lifting the water from the adjacent waterway on to the land.

312 Prior to the recent pump development such artificial means of water lifting were virtually confined to the local water wheel (kerid) or to other simple devices, operated by animal or man power. Where kerid cultivation exists to-day it seems not infrequently to be more efficient than pump cultivation, since the more laboriously acquired water tends to be more carefully used and the land to be more carefully tilled to receive it. So it may be accepted that where cultivation by kerid or other simple lifting devices existed previously, such cultivation was usually good of its kind.

311 It therefore appears that until recent years cultivation in these valuable tracts was restricted to certain fringes watered by the simple types of lift mentioned, supplemented by rain in good years, and by flood water, through flood channels, when and where conditions permitted. And since land was comparatively plentiful and cultivators
[464] comparatively scarce, the parcels of land actually cultivated varied incessantly to meet soil impoverishment, flood devastations, river

3: Clark S-5 (1950) 1951 MH1 Iraq MH1

embody previous legislation and regulations into the General Education Law of 1940. Under this law it was directed that 'The Ministry of Education shall undertake to create a nation sound in body and mind and character'. So far as primary education was concerned it was provided that it should be free, that the age of admission to the primary school should not be less than six and that the period should be six years. It was also decreed that 'Primary education shall be obligatory and shall be carried out in the districts assigned by the Ministry of Education when necessary facilities are available. Pupils' guardians infringing this Article shall be liable to a fine not exceeding three dinars'.

By this time the administration of education had been highly systematized and it remains so in the hands of the Ministry of Education centred in Baghdad. A feature of this administration is its very high degree of centralization, with the Ministry of Education controlling and supervising the most minute details both of curricula and expenditure. The Minister of Education himself appears to exercise a greater control of detail than in other countries. Under the Minister primary education is directed by a Director-General of Primary Education. In each of the fourteen provinces of Iraq there is a Provincial Director of Education who is, in reality, the agent of the Ministry of Education, and is in no sense a local official responsible to a local authority.

THE PRESENT POSITION OF COMPULSORY EDUCATION

Although legal provision for compulsory primary education was made in the General Education Law of 1940, as a reality it does not exist in any part of Iraq. Over the whole of the country out of an estimated total of 750,000 children of primary school age, not more than 175,000 attend primary schools.

Shortly after the passing of the General Education Law of 1940 an attempt was made to apply its compulsory primary education provisions in two of the provinces. Apparently, however, the declaration of compulsory education in these two provinces failed in its object. The main reasons for this failure were the poverty of the majority of the parents who were unable to dispense with the labour of their children on the land, the mobility of part of the population which was still in a semi-nomadic state, and the inability to persuade teachers to live in remote villages where housing facilities and other amenities are most inadequate. It is also stated that, these economic and social reasons apart, other factors such as the unwillingness of the local courts to inflict the legal penalties for non-attendance and the active opposition of

3: Clark S-5 (1950) 1951 MH1 Iraq MH1

562 872 But this obstacle can be exaggerated. As a glance at the figures showing the growth of primary education in Iraq indicates, the proportion of girls to boys attending primary schools is not high, but their enrolment is steadily increasing. Although most of the large urban schools are single sex schools, Iraq has the distinction of having many co-educational village schools. The growing number of kindergartens are co-educational. In all the institutions of higher education young men and women work together.

The emancipation of women in Iraq still has a long way to go, but convincing signs of it are evident. It would, nevertheless, be a considerable advance if the Ministry of Education were to encourage the recruitment of a number of women to the staffs of the boys' primary schools. From visits to many Iraqi primary schools it is evident that the standards of the women teachers in matters of personal cleanliness of the children, care and decoration of the school premises, general decorum and pleasant social conduct are higher than those of their men colleagues. Their influence in boys' schools would be most salutary.

464 872 The position of children is, of course, difficult when parents, especially in the rural areas, are dependent upon the labour of even very young children. Yet an increasing number of poor parents appear to be sending their children to school. It would be a great inducement to more and regular school attendance if means could be devised of providing free midday meals for some of the children, especially in the village schools. At one of the more modern primary schools in Baghdad attractively cooked and served midday meals are provided, but this is a school attended mainly by children from comfortable homes where the parents can afford to pay for this service. In the rural areas, however, simple food is not expensive, cooking devices and service are cheap, and it should be possible to provide free meals for the needy children at relatively low cost.

It should be noted that effective child labour legislation does not exist in Iraq. Until the time comes when such legislation can be enacted and enforced, compulsory education will be most difficult to apply.

162 166 871 *Tribal Organization and Mobility of Population.* But the most formidable obstacles of all are those related to tribal organization and mobility of population. There are two particular sets of problems, those of the tribes who are still in a nomadic state, and those of the people who are in the transitional stage of semi-settlement. Between them, it is estimated that these nomadic and semi-settled peoples number nearly 2,000,000 persons, roughly 300,000 of whom are children of primary school age.

438 [365] more attractive for industry than other areas can be corrected by proper action. First and foremost is the relative cheapness of power and fuel in Baghdad. The cost of the electric power unit in most cities is double that of Baghdad and rarely is a municipality-owned plant able to supply sufficient power to industry. The cost of oil fuel is at least ten percent higher outside Baghdad. The correction of these factors, together with a more equal distribution of educational, housing, transport and social welfare facilities, could greatly relieve the situation. The Law for the Encouragement of Industry could also be amended so as to give additional concessions for industries established in other parts of the country. The cost of labour and land is already becoming burdensome for industry in Baghdad. This, in addition to the social evil of overcrowdedness, calls for immediate consideration.

434 (4) Limitation of Markets: A newly industrialised country can hardly hope to find foreign markets for its finished products. It has to depend on its home market. The market in Iraq, with its small population (about 5 million inhabitants), of low purchasing power (annual income per head is estimated at between £ 20 and £ 30 or $85), affords very limited scope for large-scale industry. Many of the industries studied at one time by the Industrial Bank, such as the making of artificial silk fibres, the manufacture of paper and cardboard from straw, and the printing of cotton piece-goods, had to be abandoned because the smallest economic unit of these plants is much beyond the capacity of the Iraqi market to support. This situation will no doubt improve as the whole economy of the country expands. But it should be possible to deal with this situation 439 649 more effectively by joint action on the part of the Arab States, along lines already discussed at high political level. These discussions have had the object of reducing or abolishing inter-state tariff barriers so as to make the whole area one market. Such an action is indeed vital to the progress and prosperity of these countries and their peoples. It should be remembered that before World War I, these countries formed one economic and political unit under the Ottoman Empire.

464 (5) Labour, Technical Staff and Management Problems: The supply of ordinary labour, owing to the high rate of population increase (estimated to be one and a half per cent per annum) and emigration from country to town, is quite sufficient and will remain so

for some time. Women have been employed so far only in exceptional cases. A new problem has been recently experienced in the high turnover of ordinary labour. Owing to the development of the oil industry in Kuweit and other Persian Gulf areas, and the high wages being paid there, many workers in Baghdad, and more still in the depressed farming areas, have been emigrating there. The turnover in the cotton textile industry of Iraq is estimated at 20 per cent of employed labour. 464

The main difficulty however lies in the shortage of skilled and semi-skilled labour. The vast amount of illiteracy among the population, and the failure to make elementary education compulsory has made it difficult to apply any system of apprenticeship successfully. Technical education provided by the State has so far been on a very limited scale - indeed, there are only three technical secondary schools in the whole of Iraq. Therefore a new industry has often first to train its own labourers and technicians, and this of course adds to costs. In the meanwhile, most industries are dependent on foreign technicians, experts, constructors, heads of sections, and foremen. The employment of foreign technicians no doubt is inevitable in the early stages of development, but it has its own drawbacks and burdens. Foreign skill demands higher rewards abroad than it would accept at home, the standard of skill obtained is often not the highest, service is often interrupted either by ordinary leaves, or illness or inability to fit in with local conditions. [212 871 874]

The lack of qualified labour also applies to the fields of administration, accounts, and management. Efficient clerks, typists, store-keepers, accountants and secretaries are in great demand and very few are available in Iraq. The inadequacy of State commercial education is no less than that of technical education. The scarcity of able management is a serious obstacle to the progress of industry. Those few who have entered the field of industry are mostly of the type of proprietor-manager (even in joint-stock companies managers are usually fairly large share-holders); while the members of boards of directors of industrial companies, (about twenty to twenty-five men) mostly have their own business or profession to attend to. No wonder they show reluctance to go into new enterprises. For one reason or another salaried managers have not made their way into industry, except in very rare cases. On the other hand foreign management, especially on the [658 874] 464 472 473

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464 472 473 production side, is quite common. Often foreign managers are employed as experts on the basis of a monthly or annual salary, sometimes with a commission in the form of a percentage of net profits. In one case at least production management is given to an independent foreign firm of engineers against a fixed annual payment. This so-called "managing agency system" has been recently introduced in Iraq and has not given rise to any complaints yet. The "system" however has resulted in many abuses in India where it is widely used, and it is now under investigation in that country.[1]

648 1157 471 6. **Foreign Capital and Participation**: Except where foreign enterprise has obtained a concession for the development of important resources such as oil, or the supply of light and power as in the Baghdad area, there is very little foreign capital invested in industry as such. Foreign capital for reasons beyond the scope of our discussion has been invested in Iraq mainly in trade and commercial banking (short-term lending). It may be to the benefit of Iraq to induce foreign capital, and perhaps management, to participate in industry. One of the best ways to get the advantage of foreign technical skill and experience, and to bridge the gulf between the existing state of technique in Iraq and that attained by highly organised industry abroad, is to encourage foreign firms to establish branch factories in Iraq. Such branches would have their own capital and management in which Iraqi nationals and foreigners could join together on an agreed basis. It is possible that the limitation of market and geographical position may discourage foreign firms from taking this course. Some of them would require special concessions to induce them to come to Iraq. Many of them are perhaps ignorant of the possibilities that exist. And many others may require some guarantees as to: (a) the remittance of profits and repatriation of capital, (b) equal treatment with Iraqi capital and industry, (c) in case of nationalisation, fair and equitable compensation. In all these respects Iraqi practice in the past has been quite generous, but there is no legislation which clearly defines government policy toward foreign enterprise. The Law for the Encouragement of Industry (1950) stipulates that 55 per cent of the capital should be owned by Iraqi

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[1] *The First Five Year Plan, Draft Plan.* Government of India, Planning Commission, July 1951, p. 161.

6:Ireland S-5 (no date)1937 MHI Iraq MHI

servants'.[1] Regulations governed indirect relations, from the control of the carrying of arms among the inhabitants,[2] the sale of liquors and drugs[3] to minute sanitary regulations prescribing floor space per animal in stables or rewards for bringing in dogs for destruction.[4]

In all these relations between the civil population and the military authorities, the fact was never lost sight of that it was a military occupation and that a war had to be won. From the first to the last, the needs of the inhabitants were subordinated to those of the occupying Forces. Food, in certain cases, was admitted to market for sale only when the requirements of the military authorities had been met.[5] Access to piped water was forbidden.[6] Families were evicted from their houses and land requisitioned, sometimes without payment of rent.[7] Restrictions on persons and goods were carried to unnecessary lengths, even after the danger from spies had vanished.[8] Labourers in ever-increasing quantities were taken from their fields and villages and from their families and forced to work on military works, such forced labour becoming, as in Egypt, one of the outstanding grievances of the inhabitants against the British authorities.[9]

Delicate handling by the Political Officers was necessary in order to enforce the orders and regulations, harsh and exacting as many of them were, and at the same time to keep the

[1] *Procs. Basrah*, Reg. No. 12, Sec. 11.
[2] Ibid., Reg. No. 12; *Procs. 'Amarah*, Proc. No. 1, Sec. 4.
[3] Ibid., Reg. No. 12, Sec. 9; *Procs. 'Amarah*, Proc. No. 1, Sec. 7; Notice No. 5.
[4] Ibid., Notice No. 1, No. 10; *Procs. 'Amarah*, Proc. No. 1, Sec. 14.
[5] *Procs. 'Amarah*, Proc. No. 1, Sec. 14.
[6] Ibid., Notice No. 3.
[7] No rent was paid from the time of the Occupation on the four or five miles of river frontage occupied by the British at 'Amāra. *Monthly Reports, Political Officers*, December, 1918, 'Amāra, p. 2.
[8] Wilson, Sir A. T., op. cit., pp. 144, 242; *Review of the Civil Administration of Mesopotamia* (1920), Cmd. No. 1061, p. 24 (hereafter *Review C. Admin.*, 1914-1920).
[9] Telegram No. 7520, Civil Commissioner to S/S for India, July 13th, 1919. The telegram indicates that by that date both the Civil Commissioner and the General Officer Commanding were 'fully alive to the importance of abolishing forced labour at the earliest possible moment'.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

I. Introduction

311 Iraq possesses impressive potentialities for economic development. With a total population of about 5,000,000 and an area of 168,400 square miles, Iraq is sparsely populated in relation to its resources. Although all but a relatively narrow belt in the north and northeast has insufficient rainfall to sustain agriculture, the country's twin river systems—the Tigris and Euphrates—can provide large amounts of water for irrigation. Much of its soil is inherently fertile and with ample water, manpower and implements, [135] the area under cultivation might be almost tripled. In oil, Iraq possesses not only a source of foreign exchange but also a cheap source of power and raw materials essential to the development of industry, agriculture and transportation; and it may have other mineral resources susceptible of commercial exploitation. There is little doubt that the country can ultimately maintain a much larger population on a considerably higher standard of living.

511 As yet, however, this economic potential is in sharp contrast to the poverty prevailing in Iraq. The standard of living of the people is extremely low. Income per capita is probably at most ID 30.[1] Almost 90 percent of the population are illiterate and many are subject to debilitating diseases such as malaria, hookworm and bilharzia. Housing and sanitation are for the most part 433 primitive. The fundamental reasons for these conditions are low 311 output and low productivity. Most of the manpower on the land is [444] underemployed for a large part of the year, and considerable unemployment exists in the major cities. Vast tracts of land await reclamation and irrigation before they can be used. Much of the available water is wasted owing to lack of storage and regulation of [731] flow. In the spring disastrous floods often inundate large areas; and in the fall water is acutely short. Agricultural output is hampered not only by the inadequate and irregular supply of water, but also by the progressive salination of the soil in the irrigated [241] areas. Agricultural techniques are primitive, the number and quality of draft animals are inadequate and there is insufficient 433 equipment. Industry is little developed. Although perhaps as many

[1] One Iraqi dinar equals £1 or $2.80.

7: International Bank N. S-4 (1951) 1952 MH1 Iraq MH1

III. Industry

Industry is as yet little developed in Iraq. As already indicated, apart from the oil industry which employs about 12,000 people, probably not more than 2,000 are working in modern industrial plants. These plants represent a total capital investment of approximately ID 4,000,000 and an annual gross income of about ID 3,000,000. Industry is largely confined to the processing of agricultural products, the production of building materials such as cement and bricks, and the manufacture of consumers' goods like textiles, soap, matches, cigarettes, shoes and beverages. 433

Conditions, however, are generally favorable to further industrial development. An expanding agriculture should provide more materials, such as fibres and oil seeds, for processing and when the standard of living among the rural population is raised there should be a growing domestic market for industrial products. In oil and natural gas the country possesses a cheap source of power and fuel as well as an important source of raw materials. There are surface indications of iron, copper, zinc and chrome ores, as well as of the existence of sulphur and salt deposits. The extent of such deposits should, however, be confirmed by core drilling before steps are taken to undertake their commercial exploitation. In the cities there is adequate manpower for industry, and the Iraqi workman with proper training is generally adept at learning industrial processes. Skilled manpower, however, is very limited, and, naturally enough, there is little of the technical "know-how" which comes through experience and training. Other limiting factors in industrial development are the lack of sufficient private capital and initiative. Much capital, particularly that accumulated from agriculture, is hoarded and the balance is generally invested in urban or rural property, which is regarded as less risky, or in commerce, where investors anticipate a higher rate of return. While there is a trend toward increased private investment in industry, particularly since the war, industrial development in the immediate future will have to depend very largely upon the initiative or financial assistance of the government. [135] [464] [454]

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466 467 greater benefits through collective bargaining. At present, labor laws set up certain requirements with respect to hours of work, periods of rest, vacations, employment of minors and compensation for disability. The Labor Department, however, is inadequately staffed to enforce the law and the many reported violations are generally allowed to go uncorrected. In 1949-50, of 1,228 enterprises inspected, only 136 were found to comply with the law. Of the remainder, 974 were simply warned and 118 cases were referred to courts. It would be desirable to enforce existing legislation before enacting other labor laws. Efforts are apparently being made to survey the possibility of introducing a social insurance system into Iraq. Under existing conditions, however, any social insurance law might tend to remain a dead letter.

874 464 [212] Training of labor is impeded by the prevailing illiteracy which makes instruction in writing largely impossible. Elementary schooling and adult education are therefore essential to the improvement of labor efficiency. There is in existence a secondary technical school which attempts to train intermediate school graduates in industry. The curriculum of the school, however, lays too little emphasis on practical training; and the graduates of the school show a disinclination to work with their hands. It would be far better to rely on apprenticeship systems for the basic practical training, and to use the school primarily for supplementary instruction of a somewhat broader character which might be needed by the more highly skilled workers and foremen. Those who are trained in the shop or on the site through such apprenticeship systems can then be recruited from the ranks of the laboring class which is accustomed to manual work. Large private companies and public enterprises like the Iraq Petroleum Company, the railways and the Basra port administration all possess large machine shops where varied training can be imparted to many more than at present. It is suggested, therefore, that the government enlist their cooperation in the training of skilled workers for Iraq's requirements generally.

Commercial and business education is also important. Government, banking and commercial firms, and industrial concerns are all handicapped by a shortage of competent typists, stenographers, clerks, bookkeepers and accountants which has been aggravated by

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the exodus of the Jews. For industry the training of good cost accountants capable of checking the efficiency of various types of operations is especially vital. A single secondary commercial school, supplemented by a night school, and a higher College of Commerce and Economics have been established to meet the need for business training. The first appears to be functioning along sound lines, although it suffers from inadequate quarters and a shortage of teachers. As soon as competent teachers can be trained or recruited, secondary commercial schools should be opened in the other principal cities, particularly Basra and Mosul. On the other hand, the College leaves much to be desired from the standpoint of both the curriculum and the standard of instruction. It apparently produces neither competent and practical bookkeepers and accountants, nor people well-grounded in economics and finance, capable of acting as company secretaries or as economic and financial experts in business or government. Greater emphasis should be placed on practical training; the teaching staff must be strengthened, and more attention paid to banking and accounting, particularly cost accounting. Advisory committees consisting of representatives of leading banks and business houses should be appointed to both the College and the secondary school to review the curriculum, make provision for part-time apprenticeship training and check how well graduates of these institutions measure up to the requirements of business.

IV. Transport and Communications

On the whole, the existing transport system serves the present needs of the country adequately (see map). For the future the principal problems will be to make provision for essential renewals of track and rolling stock and to standardize the gauges on the railways; to develop an adequate network of metalled main roads, supplemented by feeder roads; and to establish effective control over road transport. If these problems are solved, transport capacity should have no difficulty in meeting the growing requirements of agriculture and industry.

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The technical advice thus available to the Board would usefully be complemented by an economic adviser to whom reference will be made later.

Skilled Labor

Other difficulties may well emerge in the supply of foremen, skilled and semi-skilled workers. Even now it seems to be difficult to find certain kinds of skilled workers in Iraq, and consequently they are able to command high wages compared with unskilled labor. If acute shortages are not to develop later on, it will be necessary for the Development Board to determine promptly what types of skills are likely to be in greatest demand as a result of the development program and to inquire how appropriate training can be instituted. So far as requirements for major public works are concerned, the Board will, no doubt, be able to obtain useful advice from local and foreign contracting firms with experience in Iraq. Information on requirements for other projects may be obtained from the appropriate organizations such as the railways and the Industrial Bank. Once even a rough idea of the requirements has been ascertained, the extent and quality of the available supply and the methods of training the necessary additional workers should be discussed with the Directorate of Labor, the Ministry of Education and such organizations as could be expected to cooperate in programs of training.

The Mission would not wish to suggest that this kind of manpower budgeting is an infallible way of solving all shortages. It is, however, well known that other countries, which are developing much more slowly than Iraq is likely to do within the next few years, have run up against shortages of skilled labor that might have been avoided with foresight and preparation. The Mission feels that there is sufficient evidence to show that the potential quality of Iraqi labor will not prove an obstacle. On a number of occasions the Mission members saw considerable mechanical ingenuity displayed by men with little training and inadequate tools; and these observations were confirmed by those with experience in Iraq. It would do less than justice to the Iraqi worker if the development of his innate skills were not encouraged in the directions where they are likely to be most urgently needed.

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Up to the present the Development Board has had no occasion to consider measures to avert particular labor shortages. Training does, however, take time and it is probably not too early to carry out at least a preliminary review of requirements. The Mission recommends that this be done in close cooperation with the Directorate of Labor, which, as recommended elsewhere, requires considerable strengthening.

Finally, where acute shortages do develop, the government could in the last analysis import labor. Thus among the large number of Arab refugees from Palestine there could be found many mechanics, carpenters, electricians, stoneworkers, plumbers, foremen, as well as a large number of unskilled construction workers. Contractors could also obtain foremen and some specialized workers from other countries in the Middle East.

Foreign Supplies

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Now that defense programs in the United States and Western Europe are going into high gear, Iraq may experience difficulties in obtaining equipment and supplies, and this may retard the rate at which development expenditures can be increased. One limiting factor is likely to be steel, especially steel plates and sheets and certain specialty products. This may affect the deliveries of railway equipment, even though, as in Europe, there is open capacity for the manufacture of rolling stock.

Other obstacles may be encountered in the construction projects. The market for construction equipment, particularly for certain kinds of heavy equipment, is becoming increasingly tight and anticipated deliveries may be slow. As a considerable part of the production of this equipment is covered by priority orders in the United States, it may be difficult to obtain unless a priority rating can be secured. European sources of heavy construction equipment are also tight and, although there may be some capacity for manufacture of fairly large-size equipment, overall availability in Europe, especially for heavy types, is much less than in the United States. Accordingly, it may well be desirable to carry out large-scale construction projects, if possible, through those recognized international contractors who possess substantial pools of the necessary machinery. Such an arrangement frequently results in a reduction in the amount of new equipment to be procured. Conceivably,

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least one third of the national income. Subsequently, of course, part of this income is used to pay for labor, transport and materials inside Iraq, and then spent again by those who receive these payments, thus generating a further increase in income among the people. The size of the total addition to the national income cannot be forecast, but it is certain to be substantial.

The size of the program can also be gauged in terms of manpower. The Mission has not attempted to make a detailed estimate of the quantity of labor which will be required to fulfill the program, much less the numbers who will find employment as a result of the higher level of economic activity. But an example will serve to illustrate the orders of magnitude involved. If 100,000 additional workers found employment as a result of the program at an average annual wage of ID 100, this would mean an expenditure on labor of ID 10,000,000, which would be only one fifth of the ID 50,000,000 the Development Board may ultimately spend per year on the projects themselves. Since these Development Board expenditures would, in turn, generate expansion in activity and employment in transport, industry and commerce, a figure of 100,000 cannot be regarded as excessive. It is, of course, not intended as a forecast. The actual figure may be considerably higher or lower, depending, to some extent, on how much machinery is used on the construction projects. But it will serve as an order of magnitude for the number of new jobs which may be created and which would have to be filled by the unemployed, by new additions to the labor force such as the increase in population, or by people shifted from their existing occupations. As such it may be compared with the current labor force outside of agriculture, which, on the basis of the information available to it, the Mission believes is probably not more than half a million.

Thus, on these various hypotheses, great changes can be expected which will affect the whole pattern of life. The national income will increase at a rate which, though not unparalleled, can certainly be considered exceptional. Large shifts in employment will occur as a consequence. The import trade will grow rapidly and with it, for example, customs revenues and the revenues of the Railways and the Port of Basra. It remains to examine the possible effects of these changes.

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If these measures are taken to allow a free flow of imported goods, the possibility of a severe inflation should be remote. There may, of course, be difficulty in obtaining consumer goods from abroad. If this contingency should arise, it will probably be even more difficult to obtain machinery. Thus the government will be confronted, on the one hand, with the need to use a large amount of labor on its construction projects and, on the other, with a lack of goods for them to buy. In this predicament, if inflation is to be avoided and the program is not to be delayed, the government will have to siphon off that part of the increased incomes for which there is no corresponding supply of goods. This can best be done by both direct and indirect taxation at a rate which will insure a budget surplus and by sterilization of this surplus. Initially these funds might be used to retire the public debt, which is for the most part held by the banks.

Nevertheless, even if these steps are followed and severe inflation avoided, some changes in wages and prices will occur. To a large extent, movements in wages will depend on how easy it is to find the additional manpower required on development projects. Undoubtedly there is a reservoir of unemployed and underemployed people which could be tapped. As indicated earlier, considerable unemployment exists in Baghdad, Basra and Mosul, and there are many people underemployed who would welcome opportunities for full-time work. The natural growth of population should add at least 15,000 to the labor force yearly. In the country the fellah would probably be unavailable for nonagricultural work even in the off season except perhaps in the immediate neighborhood of his home, but members of his family or relatives living with him might take advantage of new employment opportunities without a significant effect on farm output. The nomadic population may also prove to be a source of labor.

But the point will, no doubt, be reached when competition for manpower will start to drive up wages and to make agricultural workers increasingly scarce in certain districts. This would not necessarily be an unwholesome symptom. Many people are employed in a very unproductive manner, simply because labor is so cheap. Coolies carry heavy loads which should be carried by truck. Production methods in many industries and handicrafts are

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654× 464 exteremely primitive and new machines—sometimes merely a simple power tool—would greatly reduce the requirements for labor. On the land, especially, there are a number of areas where there is a heavy concentration of fellahin working small plots with the crudest tools. Mechanization, even of a simple kind, could easily make good the loss of a part of this labor. In fact, in some parts of the country, landlords are reluctant to mechanize for fear of displacing their fellahin. Thus a moderate rise in wages would improve the lot of those who take employment on the development projects and should also provide incentive to industrial and agricultural employers to give more productive and remunerative employment to those who remain.

One point should be stressed at this stage concerning the drain of manpower from the land. To the extent that this drain consists of "surplus" manpower which is already grossly underemployed, the drain can be considered a welcome change for the better. If conditions do not improve on the land, however, the drain might reach proportions which would endanger the future of agricultural production. It is notoriously easy to attract people away from the land with the promise of better opportunities and almost impossible to draw them back once they have left. Improvement in the lot of the fellah is therefore of vital importance.

654× 434 As wages may rise, so may certain prices. Demand will greatly increase, but it is as much its incidence as its volume that matters. If a liberal import policy is followed, there should be no pressure on the price of such imported goods as textiles and sugar, although, of course, changes in world prices cannot be avoided. As incomes increase, greater pressure can be expected on some local products, whose supply cannot be quickly increased and which can only be imported for considerably higher prices. In this category fall a number of foods, especially meat and other animal products such as milk and ghee. Some improvement in supply will occur as a result of diversion from exports, but this possibility is limited. In the short run, at least, somewhat higher prices for these commodities should be accepted as the price of a generally higher standard of living for the mass of the people. The same may be true of fruit (other than dates), the supply of which cannot increase until such time as newly planted trees come into bearing. The production of

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women. The census returns, in fact, record an extraordinarily large excess of women over men in some parts of the country—e.g., 57 percent in the three rural *qadhas* of Muntafiq province—but there is good reason to believe that such figures, while indicative of the true position, are generally exaggerated.

Occupation

The major occupation is agriculture and animal husbandry. Nearly two thirds of the people live in the rural villages. As handicrafts are rarely found in the villages and only a few people are absorbed by such secondary occupations as trade and transport, it is likely that 85 to 90 percent of the rural population lives directly off the land.

Many of the inhabitants of the smaller and even some of the larger towns are also engaged in agriculture. In Tel Afar, a town of 20,000 in the principal grain-growing region of Mosul province, over three quarters of the male population whose occupation was recorded gave it as agriculture. This, however, is probably exceptional and the proportion would, no doubt, be considerably less than half in many smaller towns. Even in the largest cities, there is a smaller but far from negligible proportion of the population employed in agriculture, principally in the production of vegetables, dates and other fruits or in raising livestock for the city market.

In all, the number of people in families whose income is derived directly from work on the land is probably in the neighborhood of 60 percent of the total population. This method of expressing the percentage is used advisedly. A much higher figure could certainly be given for the number of people occupied since most of the rural population is employed to some extent. Unemployment, as opposed to underemployment, is largely an urban problem. In the rural areas the number of men whose occupation was recorded by the census is often nearly as large as the number over 10 years of age. This, no doubt, corresponds closely to the facts, since even young children tend flocks and perform other light work on the land while old men help with such tasks as threshing. Women, too, are an important source of agricultural labor, particularly at harvest time, although this is inadequately reflected in the census.

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TABLE 7

ESTIMATED INDUSTRIAL EMPLOYMENT

Petroleum production and refining	11,500
Food and beverage	4,500
Tobacco	3,500
Wool and cotton processing, textiles, wearing apparel and footwear	11,000
Wood processing and wood products	2,000
Leather (other than footwear)	450
Chemicals (vegetable oils, soap, etc.)	550
Building materials	6,000
Metal-working, including jewelry	1,500
Machinery and machinery repair	2,700
Electricity and water supply	1,100
Miscellaneous	1,000
Total	45,800

Indications of output in the more primitive industries are very scanty, but data on output in some of the more modern industries can be found in the monograph on Industry. Production is, in general, on a modest scale, although some industries such as cement fill most of the country's needs.

Petroleum Production and Refining

Although production of petroleum is now rising rapidly, it has been relatively modest in the past. The exploitation of oil is predominantly in the hands of three companies—the Iraq Petroleum Company, the Mosul Petroleum Company and the Basra Petroleum Company—all owned in equal shares, except for five percent controlled by Mr. Gulbenkian, by the Anglo-Iranian Oil Company, the Royal Dutch-Shell, the *Compagnie Française des Petroles* and the Near East Development Corporation (owned jointly by Standard Oil of New Jersey and Socony-Vacuum). Of these three, the Iraq Petroleum Company, which is exploiting the large field near Kirkuk, is the only one in production. In addition, the Khanaqin Oil Company, a subsidiary of the Anglo-Iranian Oil Company, has a small concession adjoining the Iranian border.

Efforts to develop production have been concentrated mainly on the Kirkuk field where oil is found at the depth of only between

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241 aration of the soil. Similarly, small stationary threshers may offer a better alternative than large harvesting combines to the present methods of threshing by flaying and the tramping of animals. The government should pay at least as much attention to the task of getting simple, inexpensive tools into the hands of the cultivators as to the much more ambitious program of agricultural mechanization. Good hand tools, for example, are almost nonexistent. Improvement in draft animals is also necessary. While the supply of draft animals cannot be increased rapidly, it is possible to get animals of greater strength and endurance by better feeding and selection.

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In the longer run, however, there is no doubt that mechanization of agriculture will assume growing importance. Physically, the country with its flat broad plains is ideally suited to mechanization although the canals and ditches in the irrigation zone offer some impediments to the use of machinery. Moreover, even now there are labor shortages at sowing and harvest times in some parts of the country, particularly in the North. In the future such shortages may become really acute as manpower is drawn from the land to take advantage of the new employment opportunities created by the over-all development program and as some of the fellahin working on land now under cultivation leave to settle new land. Under such circumstances mechanization may become the principal means of maintaining and expanding agricultural output. In its policy respecting mechanization the government will need to steer a careful course. On the one hand, it will want to keep some check on mechanization as long and wherever there is danger of displacing fellahin before alternative means of employment become available; on the other hand, it will find it desirable to accelerate mechanization whenever labor shortages become serious. Through its control over imports and credit, the government possesses effective methods of influencing the rate of mechanization.

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241 407 427 The United States Lend-Lease Program gave mechanization its first impetus. At present there are probably about 170 combines and 550 tractors in operation in the country, with about half of the number concentrated in the provinces of Mosul and Baghdad. In addition, 75 combines and 81 tractors are owned and made

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135 Several geological surveys have located outcrops of iron, copper, zinc and chrome ores. The extent and quality of these ores, however, will not be known until further exploration work has been accomplished. There are surface indications of 30 percent elemental sulphur mixed with limestone but, as in the case of the ores, these deposits have never been adequately proven. Previous to the large-scale production of oil, some coal was mined, but actual reserves have never been fully ascertained. A large and potentially valuable salt dome was located near Basra when geophysical surveys were being conducted in connection with oil exploration. It would appear, therefore, that Iraq has a fairly broad range of minerals which might be worthy of exploitation.

Some Factors Affecting Industrial Growth

433 454 Some of the basic causes of industry's retarded development are lack of private investment, technical inexperience and inadequate markets. In the past capital has often been hoarded or invested in rural or urban property or in commerce, where the security or rate of return was believed to be higher than in industry. To some extent this tendency has been overcome through tax exemptions, tariff protection and the financial assistance of the Industrial Bank.

464 433 On the other hand, little is being done to increase the number of skilled workers and technicians through education and training. One of the biggest handicaps in apprentice training is the lack of elementary education. Employees who are unable to read and write obviously can neither receive written instructions, maintain material and inventory control, select proper repair parts nor attend advanced in-plant training classes. Until this is corrected, Iraq must continue to rely on skilled foreign technicians and, in some of the larger and more complicated industries, on foreign management.

The supply of common labor is now ample and will probably remain so for many years to come. A shortage of labor, should it occur, could be corrected by the employment of women in greater numbers and by further mechanization. Industry has not, however, reached the stage of development where this should be attempted, for a highly mechanized plant means high capital costs, greater

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overhead, increased maintenance and the need for a higher level of skilled workers. As long as labor is in sufficient supply, it will be better to use the available amount of capital to mechanize a considerable number of plants to a limited degree rather than to establish a few highly mechanized plants.

Limited internal markets, because of a small population of low purchasing power, restrict the number of industries which may be economically justified unless the product can be produced cheaply enough to find a foreign market. This condition, however, would be corrected to some extent through a rising standard of living, especially among the rural population. Improved methods of farming, increased irrigation, better sanitation and more intensive education should help to raise purchasing power gradually. As government measures to these ends begin to take hold, industry can expect the demand for consumer goods to increase at a much faster rate.

Iraq's geographic location is also a factor to be taken into account in planning industrial development. High transportation costs handicap those industries requiring the importation of a high percentage of raw materials from Europe and America. The same obstacle will, of course, confront industries relying chiefly on European markets for their finished product. The best prospects for industrial growth are therefore found in those industries which, through advantageous production costs, are able to absorb the shipping costs or those in which shipping costs represent a very minor component of the market price of their product.

II. Possibilities for Industrial Development

Expansion of Existing Industries

Many industries, such as brewing, cement making and woolen textiles, are now in the process of expansion. Partly because of tax exemptions and reductions granted by the Law for the Encouragement of Industry, these enterprises are able to finance their expansion themselves. Other enterprises which can usefully be

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Technical Education

If industrial growth is to be accelerated, it is essential that measures be taken to provide industry with skilled labor. The Industrial School at Baghdad was established to meet this need. The curriculum of the school, however, lays too little emphasis on practical training and the graduates show a disinclination to work with their hands or to take secondary positions. It would be far better to rely on apprenticeship systems for basic practical training and to use the school primarily for supplementary instruction of a somewhat broader character which might be needed by the more highly skilled workmen and foremen. Those trained in the shop or on the site would then be recruited from the ranks of the laboring class which is accustomed to manual work.

Apprenticeship systems have worked well for the Iraq Petroleum Company, for the national railways and the Basra Port Administration, all of whom have highly skilled workers trained in their own shops. Each of these organizations possesses large machine shops which could be used to train many more workers than at present. The Mission suggests that the government, through the agency of the Industrial School, enlist their cooperation in enlarging their programs to train workers for industry generally.

Commercial and business education is also important. Banking, commercial and industrial firms, as well as the government, are all handicapped by the shortage of competent typists, stenographers, bookkeepers, clerks and accountants. In industry the training of good cost accountants, capable of checking the efficiency of various types of operation, is especially vital. A single secondary commercial school, supplemented by a night school, and a higher College of Commerce and Economics have been established to meet the need for business training. The first appears to be functioning along sound lines, although it suffers from inadequate quarters and a limited teaching staff. As soon as competent teachers can be trained or recruited, secondary commercial schools should be opened in the other principal cities, particularly Basra and Mosul. The College, on the other hand, leaves much to be desired from the standpoint of both the curriculum and the standard of instruction. It apparently produces neither competent and practical bookkeepers and accountants, nor people well grounded

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arranged so that the material flows through the plant with a minimum of handling.

3. Use of Time Studies and Cost Accounting

Time studies are indispensable in some industries. In textile and machine shops, for example, these studies are essential to break down production costs for proper evaluation. To illustrate, a large costly lathe might show a greater return by speeding up its operation through the use of a different design of cutting tool, or a planer might show such a low return that its replacement by a milling machine would be fully justified. In textiles, time studies might show that it is actually more costly to have one operator tending five looms than to have him tend only four looms; or the reverse could be true, depending on all of the related factors. There are numerous other examples which could be cited to show the need of time studies in certain sectors of industry.

Cost accounting is very important to good operations and must be practiced before an industry can expect to reach maximum operating efficiency. Without it, many losses, which could easily be avoided, go unnoticed by management.

4. Improved Administration

At present there is very little delegation of responsibility by management to foremen and supervisors. This limits the economic size of plants and tends to complicate the work of management. There are good reasons for this situation, chiefly the widespread lack of education, experience and training, which has already been described. While the basic problem can be overcome only in time, industry can take steps to alleviate the immediate situation through such measures as on-the-job training programs suggested earlier, special courses for supervisory personnel, and better organization of inventories and distribution of stores of spare parts. The result should be an increase in production and, at the same time, a reduction in per-unit cost.

5. Greater Emphasis on Workers' Welfare

To hire and train a worker requires time and money, and the investment is lost if, because of sickness, the worker is unable to hold his job or to turn out a full day's work. A physical examination prior to hire would insure that a worker is physically

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roads should be kept to four meters until traffic develops. 499 Even on the latter roads, however, space for six-meter lanes and wide verges should be set aside.

2. Earth roads with little or no traffic at present should initially be raised to 50 centimeters, or somewhat less than two feet, above surrounding levels, with proper grading but no metalling until traffic actually appears. In this category should be scheduled such sections as Baghdad-Kut on the right bank of the Tigris, Diwaniya-Ur and Samarra-Shargat. The materials used for foundations ought to be selected from those found in the area, so as to avoid long haulage Suitable stone or gravel or even broken brick of sufficient hardness appears to be found within at most 100 kilometers of any given road section.
3. All depressions styled "Irish Crossings" should be removed.
4. Railway bridges should be disallowed for use by road traffic in trunk roads. The first bridge to be duplicated should be the Baquba bridge.

Feeder Roads

Agricultural and forestry development areas need feeder roads to the nearest railway station or main road or both, and provision for them should be made in development schemes for these areas. For the most part this could probably be done by improving existing country roads or tracks by grading, draining, and sometimes raising them. Good maintenance of these feeder roads is essential and might appropriately be assured by the provincial governments; generally only hand labor and a grader would be required. No hard surface is recommended for these roads. Assuming a total length of 8,000 kilometers for this system of secondary country roads, construction and maintenance of such a network would probably demand an expenditure of ID 100 per kilometer per year, i.e., ID 800,000 per annum in the initial period of five years.

One problem remains to be solved. The Public Works Department has no trained or skilled technical staff to carry out detailed surveys of existing or new roads. It is all important that correct location, alignment, levels, gradients, transition curves, camber and cant, etc., be established and maintained. It is therefore recommended that competent consulting engineers be engaged to do the plans and surveys and supervise the first large-scale construction, and that a nucleus of Iraqi surveyors be recruited to carry on [444]

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It is expected that once this work is completed, the personnel problem will ease somewhat.

The development program of the service provides for a survey and mapping to a scale of 1:20,000 at an estimated cost of ID 200,000. For the appropriate housing of the service, a new building with 10,000 square meters of floor space is now under construction and is expected to be completed in January or February 1952. This will facilitate administration of the service which is now scattered in three widely separated buildings. The new building will also house the up-to-date printing plant ordered in Great Britain. Funds for building and plant have already been sanctioned. Air surveys now in progress should be continued at an annual cost of approximately ID 40,000.

XI. General Observations

Teamwork

Not only the development of the transport services but also the general development program, with all its implications of temporary and seasonal demands for transport of construction materials and imports of machinery and plant, will materially affect the tasks before the transport managements. The teamwork in the existing transport departments is exemplary. It is therefore emphatically urged that no change be made in the present organizations and their leading personnel until after the main development programs are completed.

Intermediary Staff

In all the transport services there is a great dearth of intermediary staff—foremen, inspectors, surveyors, supervisors, and the like—for whom practical training in workshops and on construction sites is far more important than school or college education. In all transport development projects, special courses should be provided to train adaptable Iraqi apprentices under skilled teachers in shops, factories and on tracks and roads in the country.

These observations apply to all forms of transport, port, railways, roads, airways and communications. Unless continuity is maintained with a gradual, cautious transfer of responsibility from foreign to Iraqi personnel, efficiency will be seriously jeopardized.

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In this Annex it is intended to describe more fully their functions and the principles which should guide them and to illustrate this description by reference to particular conditions in Iraq. It may, however, be well to note at the outset that the men needed to discharge the functions of these offices adequately will have to be trained, as there are very few now in Iraq who have even part-time training in community planning and housing. The sooner a start is made, the quicker the offices can be built up. Promising men, who have had some experience, could be sent abroad for further training and experience. In Iraq, courses on the subjects might be introduced into the engineering and architecture curricula for those who intend to pursue a career in either of the two new government offices. Initially, it might be necessary to employ an experienced foreign technician to give these courses and to act in an advisory capacity to the government.

The Functions of Community Planning and Housing

Community planning is the process of effecting the orderly layout of a community and the continuous improvement of that community for the physical, economic and social welfare of its residents. It involves the task of thinking ahead so that proposals may be appropriate, timely, and based on factual analysis in the light of the objective sought. In an industrial community, for example, it would mean, after a survey of conditions, preparing a plan which would allocate various sections of the land to the category of use, industrial, business, residential, recreational, and so forth, for which they are best suited, considering the needs and existing facilities of the community. At all times, consideration has to be given to the future growth of the community, both in relation to the existing development and to the bigger metropolitan area or region of which it is a part.

Housing is not as broad a field as community planning, but the two are closely related, especially as housing affects the standards and development of residential areas. Housing has for its goal the most effective utilization of available resources for sheltering for the people and providing for them, or helping them to provide for themselves, the facilities and services for pleasant living. This involves the analysis of the composition and characteristics of the population, the determination of their ability to pay for hous-

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Labor and Materials

The Housing Authority could also take the lead in improving the quality of labor and materials in order to bring the costs of building down. In this task, it should cooperate with the Ministry of Education in reorganizing training methods. It could also advise the Industrial Bank on desirable types of specifications of building materials and should estimate probable requirements so that the Bank could initiate investment to this end in partnership with private enterprise.

The materials produced locally for housing construction are on the whole inferior and expensive. For example, a casual inspection of house construction in the cities will reveal that unevenly burnt bricks with cracks and chipped-off edges and corners have been and are being used. To remedy the shortage of good building materials, foreign goods have been imported at high cost. In the case of the IPC housing project, it was estimated that the cost of imported steel window and door sashes alone amounted to as much as 20 percent of the cost of the structures.

The inferiority of building materials is matched by the poor quality of building labor, which again adds to the cost of construction. There is urgent need for good carpenters, masons, plumbers, electricians and painters. Unfortunately, attempts to improve skills through vocational schools have not been altogether successful. The schools lack competent instructors, a number of those teaching in Baghdad, for example, being illiterate. Workshop accommodations are restricted and the equipment is out-of-date or in bad condition. These deficiencies might be overcome by importing instructors from neighboring countries, by obtaining new equipment and by running evening classes until more laboratory space is available. This is not, however, the full answer. Graduates from vocational schools tend to prefer desk jobs to field work. It would be preferable to concentrate more on training schemes on the job under good supervision.

Government Housing

The Ministry of Social Affairs is empowered by Law No. 38 of 1941 and Law No. 22 of 1945 to "construct dwellings for

3cRoyal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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Tigris, completed in 1939; both of these control the flow of water and serve extensive irrigation schemes. In 1952 8 million acres of land were under irrigation—five times the area in 1918; in 1949–50 3,600 pumps were in use as against 143 in 1921. Two more major projects are in process of execution: the first on the Euphrates, for which the Habbaniya Flood Relief and Storage Scheme has just been completed, and a barrage across the river at Ramadi is awaiting construction; the second for the Tigris, whose waters will be drawn off into the Wadi Tharthar as a means of flood prevention. Cultivation will be increased by dams at Darband-i-Khan, Bakhma on the Diala, Dukhan on the Lesser Zab, and possibly at Bakhma on the Greater Zab, the first also serving for flood control. Schemes of lesser construction and extension are also being planned and executed for southern Iraq. In all, the Development Board has allocated nearly 53½ million dinars for projects of irrigation and flood control during the years 1951–6, of which 4 million dinars are devoted to drainage.

Land Tenure and Conditions of Cultivation

The system of land tenure and the conditions of cultivation are responsible for a further major problem in Iraqi agriculture. There is very little peasant proprietorship. Much of the land is held on various terms by Arab tribal shaikhs and Kurdish aghas (barons) or by wealthy townsmen, who divide their land in small plots among sharecroppers, to cultivate under the supervision of their agents for a return which may be as little as 30 per cent of the yield. Of the area covered by cadastral survey, 67 per cent is held in holdings of over 1,000 dunams and 24 per cent in holdings of over 10,000 dunams. Agriculture remains, on the whole, primitive and wasteful in tools and technique because of the lack of interest, on the part of the landowners, in organization and development and because of the ignorance, poverty, and lack of security or incentive—since the landlord secures the advantages of all improvements—of the cultivators. This backwardness is illustrated by the generally low yields. The disadvantages of feudal and absentee land ownership have been perpetuated by the land settlement of the last fifteen years, which, by tending to confirm the existing procedure, has made reform more difficult of fulfilment. The establishment of large farms worked directly by their owners with modern machinery is usually prevented by the almost total absence of a class of farm labourer working for cash wages. The expansion of the cultivated area, particularly in south Iraq, is hampered by the sparseness of population. Labour is specially scarce at harvest

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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time, which, prolonged by primitive methods, may interfere with or even prevent autumn tillage and sowings. Because of the low density of population, an improvement in the water-supply of a given area in the irrigated zone usually causes a shift of population from less favoured areas, which consequently go out of cultivation. This tendency is greatly increased by the unstable nature of the rural population, a great part of which have settled to cultivation within the last century and have no lengthy attachment to their locality. Political circles are alive to the need for reform, and recently an attempt has been made to establish small-holders on lands newly introduced to irrigation (for example, on the Abu Ghuraid and Dujaila canals), and to establish co-operative organization. In 1951 a law was passed for the distribution of state land in parcels of varying size to selected settlers, up to 20 per cent of each area to be allocated to graduates of agricultural schools and former members of the police and army, and up to 25 per cent to civil pensioners and unemployed school graduates. An Agricultural and Industrial Bank, formed by the Government in 1936, contributes to the welfare of small landowners by providing cheap credits, though its resources are inadequate for the need.

Livestock

Raising livestock is of major importance both in the internal economy of the country, by providing food, transport and traction, and raw material for essential manufactures, and also in foreign trade. In the period 1948–50 livestock and their products—wool, hides and skins, intestines (casings)—accounted for about 13 per cent of Iraq's total exports excluding oil.

Most of the rural and much of the urban population depends to some extent on animal husbandry for a living, but methods have hitherto been mostly primitive and unsystematic, being semi-nomadic and divorced from crop-raising, with little attempt on the part of the owners to supplement natural feeding except in winter, or to improve the breed or combat disease. Quality and productivity are consequently low. The Government Department of Animal Husbandry, however, is experimenting to improve the breed of cattle, sheep, and mules and the Government controls the importation of animals to safeguard the native stock from diseases from which it is at present free, such as rinderpest and contagious pleuro-pneumonia. By irrigation, water conservation, and control of pasturage a more permanently settled system could be evolved, integrated more closely with the production of crops.

25: Warriner S-5 (no date) 1948 MI Middle East
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811 which now amounts to one million acres. More might be added
812 by water storage schemes. At present several large new schemes are under consideration. These involve flood control by the construction of the Bekhme dam on the Great Zab, and an extension of the Habbaniya reservoir. In addition to the Bekhme dam a scheme for flood irrigation in the Wadi Tharthar is being considered. A survey commission is now preparing a report on these developments, but so far no estimates have been made of the area of land likely to be brought into cultivation.

464 At present there is no shortage of labour. The population is
161 small in relation to the area cropped, but it is growing rapidly.
162 In 1931, according to Dowson, the total population was 2,824,000, of which 2,246,000 were estimated to be rural, including 895,000 settled population and 1,351,000 still living in tribal conditions.[1] Estimates for 1943 put the total population at 4,500,000, of which the rural population was 3,500,000. Some regions, Basra, Karbala, Dulaim, and Muntafiq are densely settled, while others, chiefly in the north, Mosul, Erbil, Kirkuk,
811 are settled very sparsely. The area of cropped land per head is 2 acres, and the area of cultivated land perhaps as much as 4 acres.

LAND TENURE

422 It is clear that Iraq has greater prospects of agricultural ex-
423 pansion than any other Middle East country. But to the development of these potentialities the greatest obstacle is land tenure. Sir Ernest Dowson, in his classical report on the subject, says: 'The injurious effect of the existing welter of uncertainty and dispute upon both the agricultural prosperity of the country and public order, can hardly be exaggerated. Every one directly or indirectly concerned with agriculture in el 'Iraq must know many individual cases in which the development and use of the land has been gravely obstructed by the widespread insecurity and confusion of rights. Indeed the most diligent inquiry would be unlikely to reveal anywhere any appreciable number of holdings, large or small, held in undisputed possession and free
000 from hampering and conflicting claims. It needs no great effort of the imagination to appreciate the blighting effect of these unhappy conditions prevailing throughout the country, upon the

[1] Sir Ernest Dowson, *An Inquiry into Land Tenure and Related Questions* (Letchworth Garden City Press for the Iraqi Government, 1932), p. 12.

25: Warriner S-5 (no date) 1948 MI Middle East
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landowners, and the occupying peasants, which has from time to time led to outbreaks of violence.

In the Amara liwa for instance the sheikh has fairly complete power over his tribal sirkals and fellaheen. 'He switches his secondary lessees around at the yearly leasing time, throwing out any one he disapproves of, allotting the portions of land either by a form of auction or by direct agreement. The power of the sheikhs varies with the prosperity of the estates. The poor estates in the liwa, for instance, the Beni Lam estates, are short of labour and the sheikh is glad to get any comer on almost any terms. In such estates, the pump-owning secondary lessees (or sirkals) become the real masters of the land they cultivate, and the sheikh becomes a rent receiver. Other poorer estates in this district are becoming the property of the big rice merchants of the towns.'[1]

A report from the Muntafiq liwa describes similar conditions. The land is being ruined by bad farming, because year after year the same land is sown with a winter corn crop, and gets no rest either through fallow or through a rotation of crops. The government regulation that land must remain fallow in alternate years is disregarded. 'Perhaps the greatest racket in this area is the undue amount of the crop taken by pump owners,' says the report. This is due to the lack of any credit system: much forward selling of the crops takes place as soon as the green appears, at ruinous prices to the cultivator, sometimes in return for a loan amounting to about a quarter of the current grain price.[2]

In the densely settled regions of the south, such as Muntafiq, the position of the cultivator is particularly bad. He usually receives only a 30 to 50 per cent share of the produce. A typical apportionment of the crop is:

Government	10 per cent
Principal tenant (sheikh)	7½
Sirkal	2½
Landowner (either the sheikh or a notable)	40
Fellah	40
TOTAL	100[3]

[1] ibid.

[2] From an unpublished report prepared for M.E.S.C. on 'Land tenure in Muntafiq Liwa', 1944.

[3] A. Bonné, 'Conditions and Problems in the Agriculture of Iraq', *Bulletin of Agricultural Economics and Sociology* (International Institute of Agriculture, Rome), February 1934, p. 53–E.

29: Dunn S-4 (1952)1952 M1 Middle East
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COTTON IN THE MIDDLE EAST

PRODUCTION

433 Industry at present is confined largely to processing agricultural products, producing building materials, and manufacturing consumer goods—matches, soap, cigarettes, shoes, beverages, and textiles.

Conditions are favorable for further industrial development. Opportunities are abundant for producing agricultural raw materials for processing, and indications are that iron, copper, zinc, chrome, sulphur, and salt exist in commercial quantities. With plenty of oil and natural gas, fuel is no problem. Manpower is adequate, and with proper training the Iraqi workman is said to be competent. A higher level of agricultural production would create also a wider market for manufactured products.

There are a number of limitations. The lack of technical "know-how" and the lack of sufficient private capital and initiative are the most important. Much capital, particularly that accumulated from agriculture, is said to be hoarded; and the balance generally is invested in urban or rural property, which is regarded as less risky, or in commerce where investors anticipate a 471 high rate of return. It is suggested for this reason that industrial development in the immediate future will have to depend very largely upon the

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—Photo Courtesy of Technical Cooperation Administration

In most of the Middle East countries, cotton harvesting and, to a certain extent, weeding depend on migrant laborers who travel from one area to another. In Iraq, most of the members of the migrant farm worker's family walk, carrying their household goods on their heads. Only the tiniest youngsters and the oldest women ride the burros.

44:Matthews and Akrawi S, G-3 (1945-1946)1949 MI Middle East
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to use as schools are found principally in the cities of Mosul, Baghdad, and Basrah and most of the capitals of the provinces.

A government primary school built within the last twelve to fifteen years in the cities usually has ten to twelve rooms about 5 × 7 meters (16.4 × 22.96 feet) or 5.5 × 8 meters (18.04 × 26.24 feet). In addition, there may be two to four smaller rooms used as offices or storerooms. Toilet facilities are outside the building. Drinking water is in large earthenware containers provided with taps from which the children can drink. School buildings need improved plumbing and sanitary facilities, but the country as a whole suffers from a lack of skilled plumbers.

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School buildings dating from the twenties are not as good as the more recently constructed ones, being less substantial and having smaller rooms. There are a few exceptions to this rule in the provinces of Basrah and 'Amarah where the erection of some schools was financed by the Maud[1] Memorial Fund and subscriptions collected by a particularly energetic governor of 'Amarah. Some buildings show signs of the rapid growth of the system, having started as two- or three-room constructions and then having a room or two added as needed.

The typical village school building has four to eight small, narrow, inadequately lighted and ventilated rooms. Some schoolrooms visited by the Commission were absolutely dark. Some first-grade rooms were badly overcrowded; in one instance the children had overflowed to the floor and filled the windows. Poor construction materials are often used for village schools, especially when hurriedly built by local authorities. Dripping ceilings were a commonplace. Some rural schools in the south, particularly in the province of 'Amarah, were housed in reed huts. After 1934, however, the government built a number of village schools of from two to six rooms of standard size with adequate lighting and ventilation.

The large number of rented houses serving as school buildings in urban Iraq is explained in terms of the growth of the school system which has been so rapid that the building program fell far short. Most of the rented buildings are not suitable for school purposes, the rooms being too small for classroom use. Play space is limited to the central courtyard, which is usually small. Repairs and readjustments are neglected because owners are reluctant to spend money on the property since prewar rental ceilings have been maintained by law. Government-owned schools, too, have deteriorated in the war years.

[1] The name of the British general who conquered Baghdad from the Turks in 1917.

44-Matthews and Akrawi S, G-3 (1945-1946)1949 Mi Middle East
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section. This policy is likely to remain in force until the Ministry of Education has enough women teachers to permit establishing a girls secondary school in each province.

Vocational Education

Iraq has a variety of postprimary schools aside from the regular intermediate and secondary schools and the institutions which train teachers for secondary schools. These special schools are designed to fill the country's need for skilled workers—mechanical, clerical, and professional—and range from simple trade schools, requiring only a public primary-school certificate for admission, to the College of Law and the Royal College of Medicine. Because of the shortage of trained workers and professional people, the government offers training in these institutions free, in most cases, to qualified applicants. (The colleges preparing professional workers will be described in the next chapter.)

Technical Schools

Technical education on a trade-school level is provided in Baghdad, Mosul, and Kirkuk for boys who have passed the public primary-school examinations. This is a four-year course, and the schools at Baghdad and Mosul have a registration of approximately 100 boys each. The school at Kirkuk was opened in the fall of 1945. Provision has been made for 400 boarding students at Baghdad; but since these facilities are in excess of the present enrollment, they are being utilized by boys from the Commercial High School and by students in the preparatory year of the Higher Teachers College. No fees are charged, and boarding students receive clothing and laundry service as well as board and room without charge. The Mosul school has no boarding students at present, though facilities are available.

In spite of such favorable provisions, enrollment in these schools is low. The advantages offered seem to be in large part nullified by the Compulsory Military Service Law which does not treat the graduates of vocational schools in the same way as those of secondary schools but requires them to spend two years in the military service as privates. Students, therefore, prefer to go to secondary schools because after graduation they can enter the reserve officers training course of nine months.

The school at Mosul provides training in weaving, carpentry, machine-shop practice, motor-car repair, and electrical wiring. During each of the first and second years twenty-two hours per week are devoted to theoretical work, and twenty hours are spent in the shops. The student in his first

Sephardic origin. The majority have since migrated to Israel, while probably less than 10,000 remain, subject to certain restrictions. Over 130,000 were transported to Israel by the Iraqi government in 1950-51. About 5,000 Palestinian refugees have settled in the country since the Arab-Israeli conflict in 1948. Small numbers of British, American and other nationalities also reside in the larger cities.

As a whole, Iraq is sparsely settled, with the population concentrated in the river valleys and in the rain-irrigated highland districts of the north. The most densely populated areas are found in the river valleys of the northern delta. In 1947, the density of population in the provinces of the upper delta region was calculated at 131 per square mile in Hilla and 104 in Baghdad. In the northern provinces of Mosul, Kirkuk and Erbil it averaged 31 to 39 per square mile, and in Sulaimaniya, on the eastern frontier, 62 per square mile. In the south, it ranged from 75 per square mile in Basra province to 42 in Amarah, while in Dulaim, on the upper reaches of the Euphrates, it did not exceed 10 per square mile. The population is essentially rural: over three quarters of the inhabitants live in some 8,000 small villages or in semipermanent settlements. The Bedouin, representing about 5 to 8 per cent of the total population, roam the deserts with their flocks, but many migrate seasonally to the towns in search of work. There are only 7 cities with over 40,000 inhabitants. The population of Baghdad, the capital, was estimated at between 900,000 and 1 million in 1952, including over 500,000 in the metropolitan area and several hundred thousand in the surrounding suburbs. The population of Mosul, a commercial center on the upper Tigris, totaled about 150,000, and of Kirkuk, the metropolis of the oil region, almost 75,000. Basra, the chief port, located on the Shatt al Arab, had a population of 90,000 to 100,000.

In spite of considerable progress in education within the last 30 years, the majority

163 lation, and the death rate, 25 to 35. The
165 discrepancies in reporting are probably less in the case of deaths than of births.

On the basis of the health district populations for 1950, the infant mortality rate was calculated at 98 per 1,000 live births. The death rate of infants under 1 year was 14 per cent of the total deaths, and of children under 5 years, about 23 per cent. Local observers estimate that the mortality in infants under 1 year approximates 300 to 350 per 1,000 live births among most rural and impoverished urban communities, and that it reaches almost 500 per 1,000 live births in children under 5 years of age. Intestinal diseases, undernutrition, respiratory infections and malaria are prominent among the causes of death in infancy and early childhood.

Social Economy

241 Agriculture and the petroleum industry together form the basis of Iraq's economy. Although this region was one of the chief granaries of the world centuries before the Christian Era, the present agricultural resources of the potentially fertile Tigris and Euphrates river basins are only partially developed. About 75 to 80 per cent of the inhabitants are engaged in farming or pastoral pursuits, but progress is retarded by the prevailing forms of land tenure, shortage of labor supply and inefficient methods
311 of cultivation. In 1950, less than one fifth
241 of the arable land, normally estimated at 25 to 30 million acres, was under production. Extensive areas of the alluvial plain are cultivated by means of irrigation, but improper drainage often results in considerable annual loss of soil fertility. A system
427 of tenancy farming predominates in most
423 sections of the country. The proportion of land-owning peasants is small and largely restricted to the northern provinces. In central and southern Iraq many families are
[344] migratory cultivators who work on a share-cropping basis for wealthy and, usually, absentee landlords.

341 Cereals, tobacco and cotton are important

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64: Shwadran S-4 (no date) 1955 M1 Middle East
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with enormous spending, brings in its wake a host of problems and dangers: inflation, a great strain on a primitive economy, shortages of human resources (civil servants, teachers, doctors, engineers), and the overburdening and eventual breakdown of transportation and communications. Nevertheless, progress was registered. Many irrigation and drainage projects were undertaken, and some were completed; a beginning of agrarian reform and rehabilitation through such projects as Diyala was made.[30] In 1952 the United Nations reported that a slight expansion in industry had been achieved and a basis for more rapid development laid. Capital investments in major industries rose from a cumulative total of ID3.18 million in 1948-1949 to 5.84 million in 1951-1952; the value of output rose from ID 1.4 million to 4.4 million, and the number of workers increased from 1,650 to 4,550.[31]

In its report for the fiscal years 1952-1953 the Development Board stated that considerable progress had been made on some of the construction and irrigation projects although it had not used up its revenues and had granted ID6.3 million to municipalities and Government departments to carry out new programs.[32]

The impact of the oil industry on Iraq was not as great as it could have been. In spite of Government effort, and in spite of the belief held by some governmental leaders that it was an unconditional, integral part of the overall development program, industry made very little progress. There have been some advances in agriculture, but not as much as hoped for. There exists a serious danger that after the irrigation projects are completed and the land available for cultivation increased, unless the Iraqi peasant is educated—psychologically as well as technically—to utilize the additional acreage effectively and constructively and to keep the irrigation machinery in working order, the enormous expenditures may well have been wasted. Neither will the new hospitals and new school buildings be able to fulfil their proper functions unless there are enough trained doctors, nurses and teachers with a social consciousness and a deep-seated and genuine desire to help the impoverished,

[30] Burns, "Development Projects in Iraq," *The Middle East Journal*, V, Summer, 1951, 362-366.
[31] U. N., *Summary 1952-53*, 22.
[32] *Al Zaman*, July 24, 1953.

Petroleum

433 The petroleum industry in Iraq has made striking progress during the post-war
382 period. Production and exports, which had been low mainly owing to the lack of
315 transport facilities, increased sharply following construction of new pipelines
439 to the seacoasts. Exploration activities led to the discovery of new oilfields, which are being developed. As a result of increasing output of petroleum and the revision of the terms of payment, Iraq's oil revenues have multiplied. These revenues have provided the financial means for development of the country's resources. Revenue from the oil industry, which is in the form of sterling, together with the substantial and rising foreign exchange disbursements of the oil companies for local expenditures, increased considerably the foreign exchange supplies of the country and made larger imports possible. Availability of
[464] petroleum products, at relatively low cost, has facilitated economic development, and the consumption of oil products has increased severalfold. In addition, the petroleum industry has given employment to an increasing number of employees (see table 27) and is providing them with training. After a setback during the war years, when production declined to 1.6 million metric tons in 1941, output of crude petroleum in 1944 recovered to its pre-war level of 4.3 million metric tons. Construction of two additional pipelines, parallel to the previous lines and with a yearly capacity of about 4.5 million tons each, started immediately after the end of the war. The pipeline to Tripoli was completed in 1949, but construction of the other, destined for Haifa, was interrupted by the Palestine conflict and it remains incomplete. Another large-diameter pipeline with an annual throughput capacity of 13.5 million tons, linking the Kirkuk field to Baniyas in Syria, was completed in 1952 at a cost of ID 41 million. In the meantime, the activities of the Basrah Petroleum Company and the Mosul Petroleum Company, Ltd., both affiliated with the Iraq Petroleum Company, led to the discovery of Ain Zalah and Butmah oilfields in the Mosul area, and Zubair and Rumaila oilfields near Basra. The development of these fields, especially Zubair, and the installation of pipelines and oil handling facilities during the past four years, has increased substantially the crude petroleum export capacity of Iraq. In addition, another smaller oilfield had been discovered by a subsidiary of the Anglo-Iranian Oil Company before the war at Naftkhaneh, near the Iranian border, and its output, which was refined locally, served the domestic market exclusively.

As a result of the foregoing developments during the last decade, as well as increasing world demand for petroleum, production of crude oil, which had declined from 4.7 million tons in 1946 and 1947 to 3.4 million tons in 1948, because of the Palestine conflict and the shutdown of the pipeline to Haifa, started to rise sharply, to 6.5 million tons in 1950, 18.9 million in 1952, and 29.6 million in 1954, representing in the latter year 4.3 per cent of the world's crude petroleum output as against 1.5 per cent in 1938. This production may be compared with proved oil reserves, which were estimated at 700 million tons in early 1949, and nearly 2,300 million tons at the end of 1954. Total investment in the petroleum industry of Iraq was estimated in 1952 at approximately ID 90 million, of which the main portion had been for construction of pipelines.

439 Iraq is exclusively an exporter of crude petroleum; the value of petroleum
382 exports was estimated at ID 137 million in 1954 as compared with ID 10 million
471 in 1938. Exports are handled by the parent companies of the Iraq Petroleum Company and its affiliates, but under the terms of the February 1952 agreement,

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Table 27. Iraq: Operations Of Petroleum Companies, Selected Years

(Output in thousands of metric tons; value in millions of Iraqi dinars)

Year	Production (crude petroleum)	Consumption of petroleum products	Estimated value of crude petroleum exports	Value of imports by petroleum companies	Direct payments by petroleum companies a/	Foreign exchange disbursements by petroleum companies for local expenses	Number of employees in petroleum industry b/
1927-33 ...	105	125	-	...	0.64	...	3.6
1938	4,298	190	10.3	1.0	1.98	0.58	4.5
1941	1,566	265		0.3	1.46	...	3.3
1946	4,680	385	10.8	2.4	2.33	2.14	11.3
1947	4,702	470	14.0	5.0	2.35	5.60	14.6
1948	3,427	505	11.4	9.3	2.01	7.03	14.2
1949	4,067	520	14.1	10.3	3.24	6.40	12.9
1950	6,479	560	28.7	8.4	5.35	4.39	11.4
1951	8,351	610	37.1	8.7	13.21	5.69	11.0
1952	18,843	710	83.0	14.4	37.41 c/	7.18	13.3
1953	28,217	795	125.6	13.2	49.87	...	13.2
1954	29,550	...	136.9	...	67.50 d/	...	...

Source: United Nations, Statistical Yearbook; International Monetary Fund, Balance of Payments Yearbook, and International Financial Statistics (Washington, D.C.); Ministry of Economics, Statistical Abstract of Iraq (Baghdad); National Bank of Iraq, Quarterly Bulletin No. 11, July-September 1954 (Baghdad).

a/ Figures are for fiscal years beginning on 1 April of the year stated.

b/ Thousands; end of year data.

c/ Including ID 5 million for settlement of previous claims.

d/ Calendar year.

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in 1935, the Agricultural and Industrial Bank was founded. Little progress was achieved before the outbreak of the Second World War, and during the war the difficulty of importing equipment prevented expansion. However, after 1942, industrial investment began to increase, the total amount from 1943 to 1948 being ID 3,089,000. 1/ Between 1948/49 and 1951/52, the capital invested in the principal industries, other than petroleum, increased from about ID 312 million to ID 4.4 million, the value of production from 1.4 million to ID 3.6 million, and the number employed from 1,649 to 3,837. 2/ Since then, there has been substantial development. In 1954 it was estimated that there were some 70,000 to 80,000 persons engaged in manufacturing. Of these, somewhat less than half were handicraftsmen; some 13,000 were employed in the petroleum industry; 10,000 to 15,000 in the textile and leather industries; about 6,000 in the building materials industry; about 4,500 in the food and beverages industries; and some 3,000 to 4,000 in the tobacco industry. 3/

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Manufacturing is concentrated around Baghdad, which accounts for about 70 per cent of total factory employment. In 1954, a check on firms in Baghdad showed that, of a total of 31,600 workers, 6,700 were in firms with over 1,000 employees; 3,800 were in firms with 500 to 999 employees; 2,000 were in the 250-499 group; 4,300 were in the 100-249 group; 3,000 were in the 20-99 group; 1,500 were in the 10-19 group; and 10,200 worked in firms employing 9 persons or less. 4/

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Recent surveys have indicated that Iraq may contain appreciable quantities of iron ore, copper, sulphur and sulphur compounds, gypsum, bitumen, dolomite, calcite and different varieties of marble. 5/ However, up to the present, little use has been made of these minerals, and the most important industries are those based on agricultural materials, namely: spinning and weaving of cotton and woollen textiles; rayon weaving; jute spinning and weaving; soap-making (about 7,500 tons); vegetable oils; tanning; tobacco products; beer (1,840,000 litres); alcohol (318,000 litres) and alcoholic drinks (1,560,000 litres). The recently founded cement industry produces about 200,000 tons a year. Consumption of electricity increased from 47 million kilowatt-hours in 1946 to 82 million in 1949 and 272 million in 1953. The amount used in manufacturing increased from 20 million kilowatt-hours in 1946 to 35 million in 1949 and 159 million in 1953. 6/

1/ Industrial Bank, First Annual Report (Baghdad, 1948) (in Arabic).

2/ Hassan Ahmad Salman, "Development of Industry in Modern Iraq", Amgrad, March 1954 (Baghdad).

3/ Carl Iverson, Monetary Policy in Iraq (Baghdad, 1954), page 71.

4/ The Iraq Times Annual, 1954 (Baghdad), page 54.

5/ Salman, loc. cit.

6/ These figures include electricity consumed at the oilfields, which increased from about 11 million kilowatt-hours in 1946 to about 21 million in 1949 and about 116 million in 1953; they exclude electricity consumed at pipeline stations, which amounted to 71 million kilowatt-hours in 1953 (Statistical Abstract).